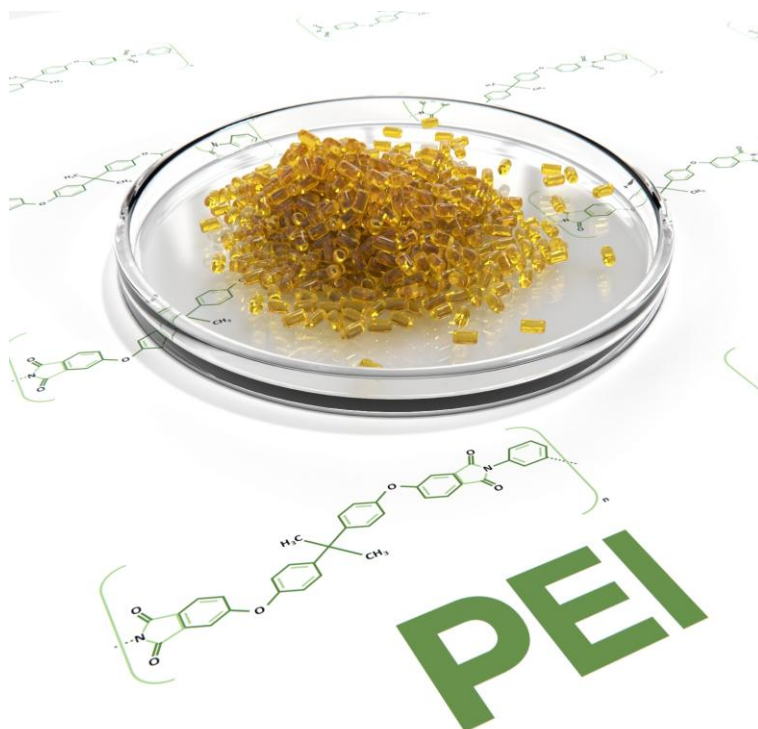


Material Datasheet — PEI (Polyetherimide)



High-temperature amorphous thermoplastic with excellent electrical properties and inherent flame resistance.

This datasheet is suitable for designers of threaded components and hinge assemblies made from this material.

Key specifications

Item	Value
Continuous Use Temperature	$\approx 170\text{ }^{\circ}\text{C}$ / $338\text{ }^{\circ}\text{F}$
UL 94 Flame Rating	V-0
Density	$\approx 1.27\text{ g/cm}^3$

Mechanical properties (typical)

Property	Test method	Typical value	Unit
Tensile strength (23 °C)	ISO 527	100–110	MPa
Tensile modulus (23 °C)	ISO 527	3.2–3.8	GPa

Thermal properties

Property	Test method	Typical value	Unit
Glass transition temperature (T _g)	ISO 11357	217	°C
HDT (1.8 MPa)	ISO 75	200–210	°C

Electrical properties

Property	Test method	Typical value	Unit
Dielectric strength	IEC 60243	18–22	kV/mm
Relative permittivity (1 MHz)	IEC 60250	3.1–3.3	—
Dissipation factor (1 MHz)	IEC 60250	0.001–0.01	—

Tribology

Property	Test method	Typical value	Unit
Coefficient of friction	—	0.25–0.35	—

Moisture & environment

Property	Test method	Typical value	Unit
Water absorption (24 h)	ISO 62	0.1–0.3	%

Chemical compatibility — high-level guidance

Good resistance to hydrocarbons and alcohols; avoid strong bases and some halogenated solvents

Assembly guidance — threaded parts & hinges

- Use a torque wrench and target application-validated torque; account for material creep/relaxation over time.
- Distribute bearing stresses with appropriate washers or flange features.
- For low-friction materials, consider prevailing-torque nuts, thread-locking, or mechanical locking features.
- Avoid sharp stress concentrators near thread run-outs and hinge knuckles; use generous fillets and radii.
- Observe service temperature, environment (chemicals/UV/steam), and moisture conditioning effects before final torque/preload selection.
- Match mating material where galvanic/corrosion or differential expansion could be a factor.